DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
Office of Structural Materials
Quality Assurance and Source Inspection

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Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: 70.28

WELDING INSPECTION REPORT

Resident Engineer: Pursell, Gary
Address: 333 Burma Road
City: Oakland, CA 94607

Report No: WIR-007105
Date Inspected: 09-Jun-2009

Project Name: SAS Superstructure
Prime Contractor: American Bridge/Fluor Enterprises, a JV
Contractor: Japan Steel Works

OSM Arrival Time: 730
OSM Departure Time: 1630
Location: Muroran, Japan

CWI Name: Chung Fu Kuan

Inspected CWI report:	☐ Yes	☑ No	☐ N/A	**CWI Present:**	☑ Yes	☐ No	
Electrode to specification:	☑ Yes	☐ No	☐ N/A	**Rod Oven in Use:**	☑ Yes	☐ No	☐ N/A
Qualified Welders:	☐ Yes	☐ No	☑ N/A	**Weld Procedures Followed:**	☑ Yes	☐ No	☐ N/A
Approved Drawings:	☑ Yes	☐ No	☐ N/A	**Verified Joint Fit-up:**	☐ Yes	☑ No	☐ N/A
				Approved WPS:	☑ Yes	☐ No	☐ N/A
				Delayed / Cancelled:	☐ Yes	☑ No	☐ N/A

Bridge No: 34-0006
Component: Tower, Jacking, and Deviation Saddles

Summary of Items Observed:

On this date Caltrans OSM Quality Assurance (QA) Inspector Mr. Art Peterson was present during the times noted above for observations relative to the work being performed in Fabrication shop #4 and the Foundry shop at Japan Steel Works.

Machine Shop #4:

Machining Operation on Saddle: Tower Saddle Segment T1-1 (cast section welded to steel section)

The QA Inspector observed that tower saddle segment T1-1 is located in Machine Shop #4 to have the final machining performed. On this date, the QA Inspector observed that the interior of the south cable trough is being milled to final dimensions on the tower saddle segment.

Fabrication Shop #4:

Weld Operation of Saddle: Tower Saddle Segment T1-2 (steel section welded to steel section)

The QA Inspector observed the partial-joint penetration groove (cover pass and final pass) weld operation on the stem plate (steel section) to base plate (steel section) of tower saddle T1-2. The QA Inspector observed Quality Control (QC) Inspector Mr. Chung Fu Kuan verify prior to and during the weld operation that the minimum preheat temperature of 110 degrees Celsius was maintained and the welding parameters of JSW welding personnel Mr. T. Isobe (08-5176) on weld joint no. 8S-2L- (between plate no. 8-9 and 8-6) and Mr. J. Yaegashi (07-2941) on weld joint no. 8S-3L- (between plate no. 8-10 and 8-6) were in compliance with WPS SJ-3012-3 per the FCAW-G process in the (1G) flat position using (1.6) mm diameter TM55 electrode. The QA Inspector observed that the partial-joint penetration groove weld operation was in process at the end of the QA Inspectors' shift.

NDT Operation on Saddle: Tower Saddle Segment T1-3 (cast section welded to steel section)
The QA Inspector observed Nikko Inspection Services (NIS) Quality Control (QC) NDT Inspector Mr. R. Kumagai (#132) performing the magnetic particle test (MPT) inspection (dry method) on the partial-joint penetration (PJP) groove welds on the rib (cast section) to rib plate (steel section) and the stem (cast section) to stem plate (steel section) of tower saddle segment T1-3. On this date, the QA Inspector observed that the MPT inspection on the PJP groove welds of tower saddle segment T1-3 was in process at the end of the QA Inspectors' shift.

Repair weld Operation on Saddle: West Deviation Saddle Segment W2-E1 (cast section welded to steel section)
The QA Inspector was informed by Quality Control Inspector Mr. Chung Fu Kuan that the repair welding would be performed on this date on the end of partial joint penetration butt-joint groove weld no. E1Y-5U on west deviation saddle segment W2-E1. The repair welding will be performed by the SMAW process in the (2G) horizontal position using E9018 electrode after the preheat temperature of 170 degrees Celsius was maintained as per WPS SJ-3011-9. The QA Inspector observed that the repair weld operation has not started by the end of the QA Inspectors' shift.

Storage of Saddle: West Deviation Saddle Segment W2-E2 (cast section welded to steel section)
The QA Inspector observed that west deviation saddle segment W2-E2 is located in Fabrication Shop #4. On this date, the QA Inspector observed that no work was performed on west deviation saddle segment W2-E2.

Machine Shop #4
Machining Operation on Saddle: West Deviation Saddle Segment W2-E3 (cast section welded to steel section)
The QA Inspector observed that west deviation saddle segment W2-E3 is located in Machine Shop #4. The JSW personnel previously performed the dimensional inspection and verified the location of the rib and stem against the approved drawings. Afterwards, the JSW personnel scribed the assembly control lines (ACL) on the edges of the ribs, stem and base plate for reference during machining. On this date, the QA Inspector observed that the machining operation has not started on west deviation saddle segment W2-E3.

Fabrication Shop #4
Grinding Operation on Saddle: West Deviation Saddle Segment W2-W1 (cast section welded to steel section)
The QA Inspector observed the JSW personnel performing the grinding operation of rejectable indications on the partial-joint penetration (PJP) groove welds at locations marked up by Nikko Inspection Services (NIS) Quality Control (QC) NDT Inspector Mr. R. Kumagai (#132) after performing the magnetic particle test (MPT) inspection (dry method) on the partial-joint penetration (PJP) groove welds on the rib (cast section) to rib plate (steel section) and the stem (cast section) to stem plate (steel section) of west deviation saddle segment W2-W1. The QA Inspector observed that the grinding operation was in process on west deviation saddle segment W2-W1.

Grinding Operation of Saddle: West Deviation Saddle Segment W2-W2 (steel section)
The QA Inspector observed that JSW personnel were performing the grinding operation on west deviation saddle segment W2-W2 (steel section). The JSW personnel were grinding on the lands (root face dimension) of the double bevel groove areas that were not accessible to be machined to meet the mill to bear surface requirements. The QA Inspector observed that the grinding operation was in process on west deviation saddle segment W2-W2 (steel section) at the end of the QA Inspectors' shift.

Buttering Weld Operation on Saddle: West Deviation Saddle Segment W2-W2 (cast section)

The QA Inspector observed the weld surfacing (buttering operation / build-up of weld metal) on the end section of the trough was completed on west deviation saddle segment W2-W2 (cast section). The buttering operation was performed at specific locations where the lifting lugs will be welded for JSW personnel to position and re-position the saddle segment for the weld operation. On this date, the QA Inspector observed that no other work was performed on west deviation saddle segment W2-W2 (cast section).

Re-positioning of Saddle: West Deviation Saddle Segment W2-W3 (steel section being welded to steel section)

The QA Inspector observed that JSW personnel were re-positioning west deviation saddle segment W2-W3 in preparation to change the location on the rib (cast section) to rib plate (steel section) partial-joint penetration double bevel groove butt-joint weld operation. The change in the location of the weld operation also allows for the JSW welding personnel to be able to weld in a more ideal position. The QA Inspector observed that the re-positioning of west deviation saddle segment W2-W3 was in process at the end of the QA Inspectors' shift.

Fit-up Operation of Miscellaneous Channel to Rocker Bearing Plate Assembly: East Saddle E2-W1

The QA Inspector observed that the fit-up operation was in process on the miscellaneous channel to the rocker bearing plate- (piece mark no. 21-1) of the rocker bearing plate assembly that will be anchored to the east saddle grillage at location E2-W1. The QA Inspector observed that the fit-up operation was in process at the end of the QA Inspectors' shift.

Weld Operation on End Splay Cover Plate Assembly: East Saddle E2-E1

The QA Inspector observed the complete-joint penetration groove weld operation on the (cover plate stiffener to base plate) of the end splay cover plate assembly for east saddle E2-E1. The QA Inspector observed Quality Control (QC) Inspector Mr. Chung Fu Kuan verify prior to and during the weld operation that the minimum preheat temperature of 110 degrees Celsius was maintained and the welding parameters of JSW welding personnel Mr. K. Kobayashi (08-5023) on stiffener plate 24-4 to base plate 24-1 were in compliance with WPS SJ-3177-2 per the FCAW process in the (1G) flat position using (1.6) diameter TM55 electrode. The QA Inspector observed that the complete-joint penetration groove weld operation was in process at the end of the QA Inspectors' shift.

Foundry:

Storage of Saddle: West Deviation Saddle Segment W2-W3 (cast section)

The QA Inspector observed that west deviation saddle segment W2-W3 (cast section) is located in the Foundry Shop for storage until west deviation saddle segment W2-W3 (steel section) is ready for the fit-up operation. On this date, the QA Inspector observed that no work was performed on west deviation saddle segment W2-W3 (cast section).

Defect Removal on Cast Saddle: East Saddle E2-E1 (cast saddle)

The QA Inspector observed JSW personnel performing the gouging operation on the second side of the cast saddle by the air-carbon arc gouge method to remove rejectable indications located on the exterior of the trough section, stem section, and rib section at various locations along its length on east saddle E2-E1 (cast saddle). The rejectable indications were previously marked up by Nikko Inspection Services (NIS) QC NDT Personnel Mr. H. Kohama (#86) from the magnetic particle test (MPT) inspection and the ultrasonic test (UT) inspection performed on the exterior of the trough section, stem section and rib sections of east saddle E2-E1 (cast saddle). The QA Inspector observed that the gouging operation was in process on the trough section of the east saddle at the end of

the QA Inspectors' shift.

Weld Operation on Cast Saddle: East Saddle E2-W1 (cast saddle)

The QA Inspector observed the repair weld operation on excavated areas on exterior of the trough (opposite the ID side) on east saddle E2-W1. The QA Inspector observed Quality Control (QC) Inspector Mr. T. Imai verify prior to and during the weld operation that the minimum preheat temperature of 150 degrees Celsius was maintained and the welding parameters of JSW welding personnel Mr. S. Morohashi (91-2255) and Mr. H. Onodera (93-2272) were in compliance with WPS SJ-3026-4-2 per the SMAW process in the (1G) flat position using (4.8) mm diameter E9016-G electrode. The QA Inspector observed that the repair weld operation was in process at the end of the QA Inspectors' shift.

Shaping Operation on Saddle: West Jacking Saddle (cast saddle)

The QA Inspector observed that JSW personnel were performing the shaping (scarfing) operation- (removal of excess cast material on the rough casting) by the air-carbon arc gouge method on the exterior of the trough, stem and rib sections on the west jacking saddle to profile the trough, stem, and rib sections of the west jacking saddle to the proper shape, dimension and radius. The QA Inspector observed that the shaping operation was in process at the end of the QA Inspectors' shift.

Unless otherwise noted, all observations reported on this date appeared to be in general compliance with the applicable contract documents.

Summary of Conversations:

No significant conversations were reported on this date.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Nina Choy, 510 385-5910, who represents the Office of Structural Materials for your project.

Inspected By:	Peterson,Art	Quality Assurance Inspector
Reviewed By:	Guest,Kittric	QA Reviewer